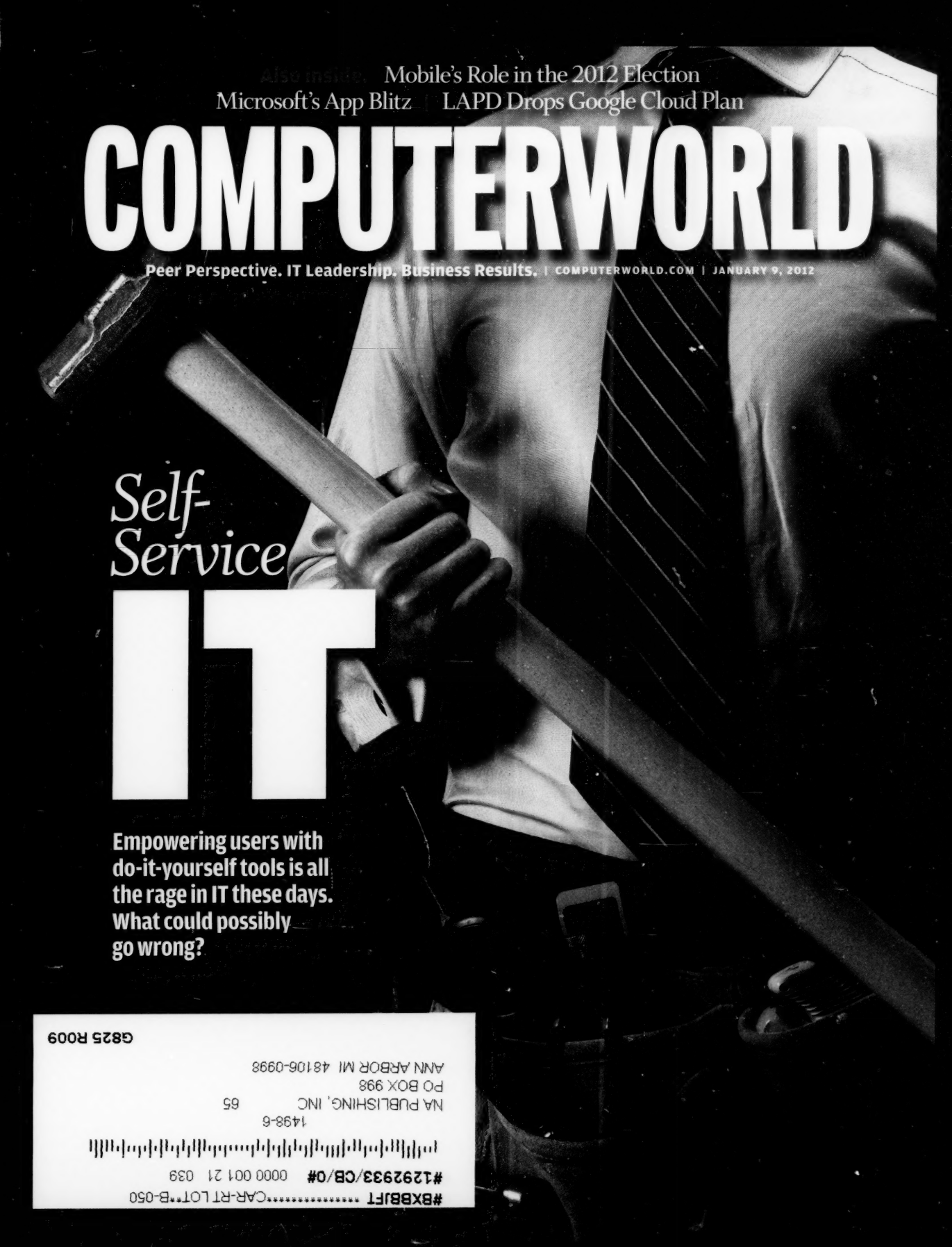
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Self-Service IT
Empowering users with do-it-yourself tools is all the rage in IT these days. What could possibly go wrong?

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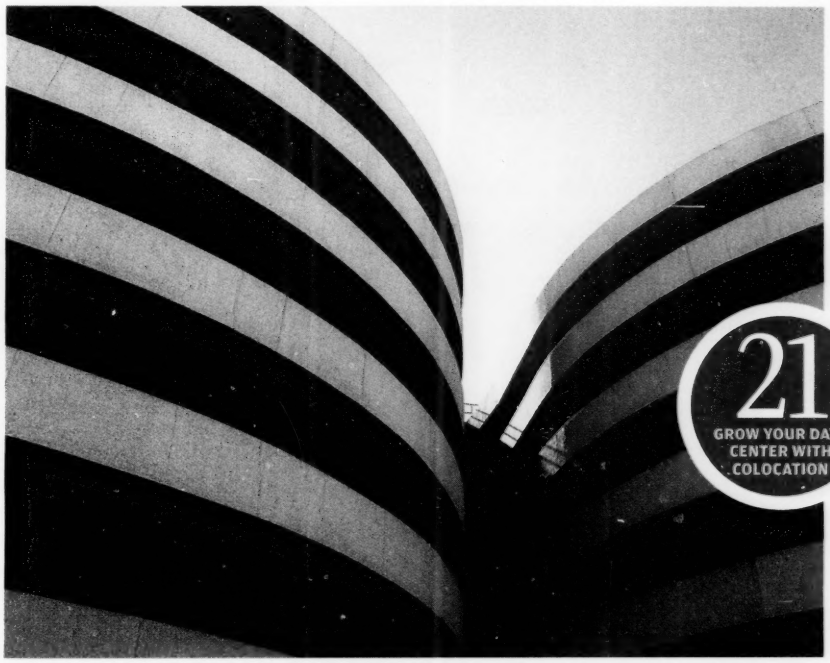

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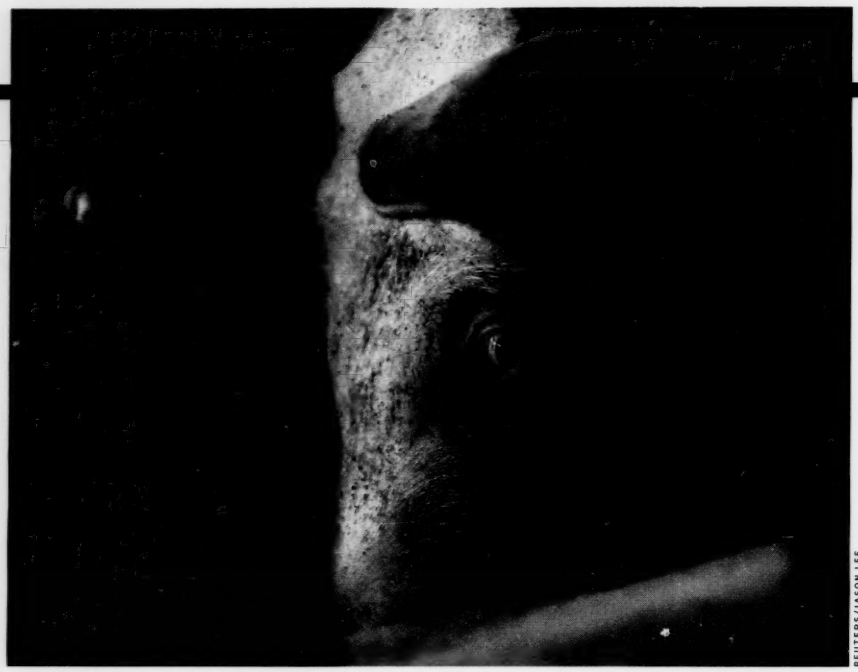
Fresh Insights
New Trends
Great Ideas

HeadsUp



REUTERS/JASON LEE

EMERGING TECHNOLOGY

IBM Tracks Pork Chops From Pig to Plate

MEAT SUPPLIERS can track a single pig all the way from live animal to pork chop, thanks to new technology from IBM that may limit or prevent disease outbreaks.

Pigs are identified with a barcoded ear tag. That tag helps track various pig parts as they pass through the slaughterhouse and on to the processing plant, the distribution center and finally the package in a grocer's case.

Some trial systems are being installed in slaughterhouses and retail stores in the Chinese province of Shandong. China's interest stems from an outbreak of blue-ear pig disease from 2006 to 2007. The illness doesn't affect humans, but at the time, it led to a pork shortage and sent prices soaring. There was worry that the disease could spread to other pigs around the globe.

IBM's algorithms analyze data and assess risk levels to try to quickly identify problems. For instance, the systems could categorize some shipments from certain suppliers as high risk and then target inspection and testing resources to potential problem areas.

Steven McOrist, a veterinary expert on pigs at the University of Nottingham in England, said that tags on pigs could help monitor the early stages of disease but that other diagnostic tools including blood tests "are still needed" to clarify the actual problem and help determine the best solution.

"Ultimately, the holy grail of this exercise is if you can prevent an outbreak from happening," said Paul Chang, who leads global strategy for emerging technologies at IBM.

– Patrick Thibodeau

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STORAGE

Hard Drive Makers Slash Warranties

In a bid to save money or redirect funds to product development, Seagate and Western Digital are cutting hard drive warranties – in some cases from five years to one.

Seagate's warranties on certain drives were shortened as of Dec. 31, and Western Digital followed suit on Jan. 2. All drives shipped prior to those dates will continue to carry the warranty term in effect at the shipping time.

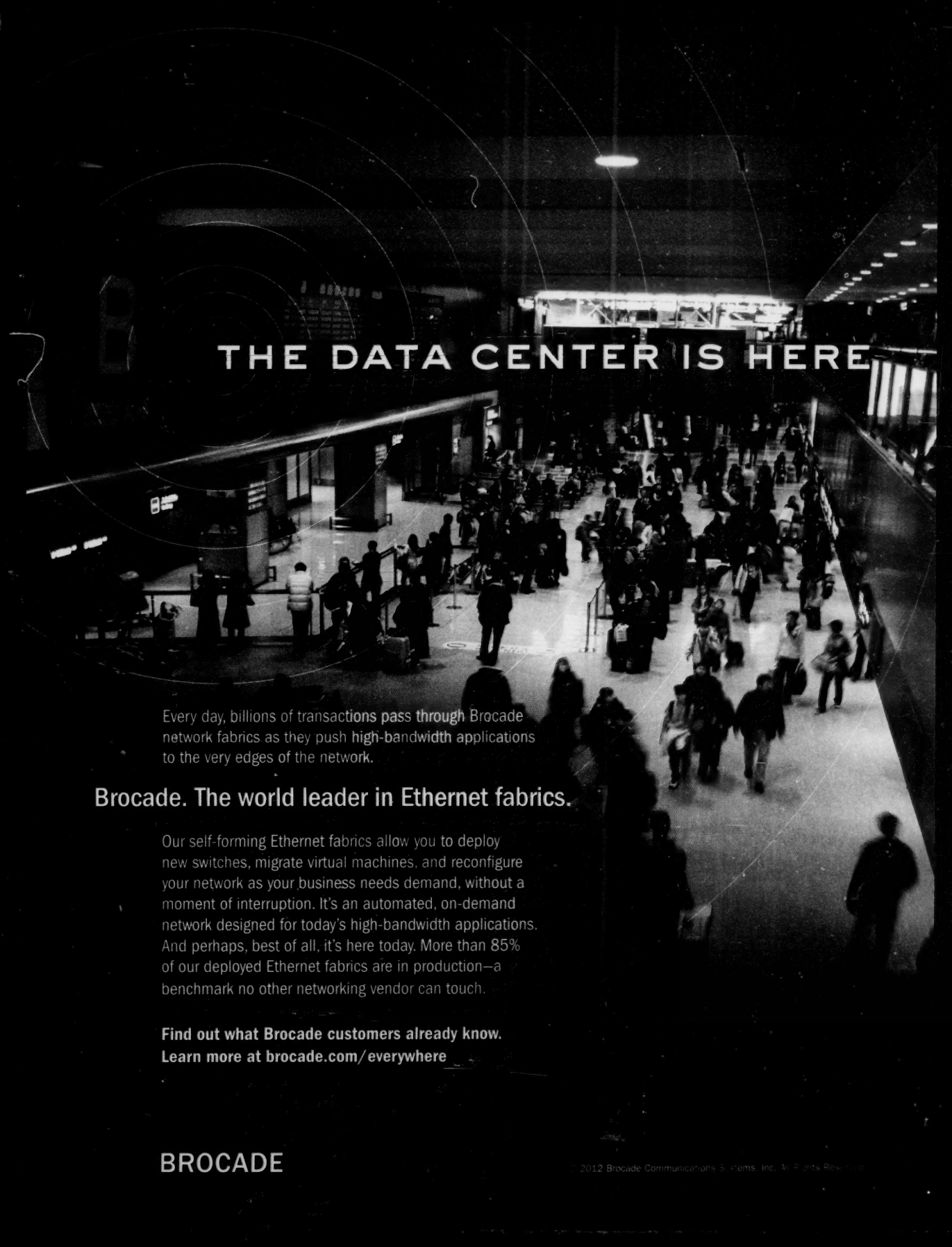
First reported by The Register, a London-based technology website, the reductions mean some of the vendors' most popular PC drives will no longer carry three- or five-year warranties.

Seagate said it is reducing warranty periods as a way to redirect cash flow to product development. The vendor said there is no change in the warranties of "mission-critical" enterprise drives including the Cheetah line. But warranty periods for the Momentus XT hybrid drive and nearline products including the Constellation 2 series are being cut from five years to three.

Warranties for some of Seagate's desktop and notebook drives, including the Barracuda, are being cut from five years to one.

Western Digital announced that it's cutting warranties for Caviar Blue, Caviar Green and Scorpio Blue drives from three years to two, but it didn't offer an explanation for the changes.

– LUCAS MEARIAN



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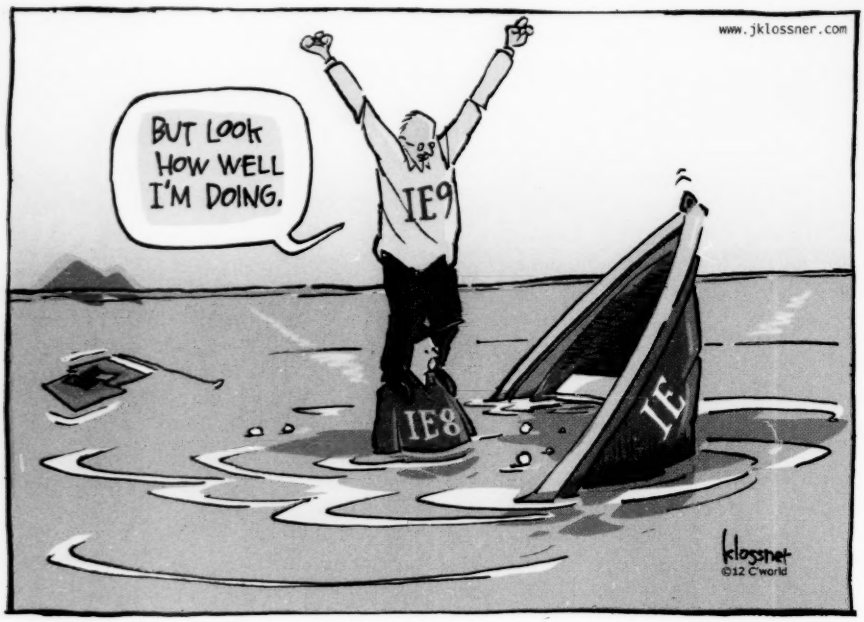
BETWEEN THE LINES
By John Klossner



SECURITY

Big IT Vendors Lead Patching Laggards

IBM, HEWLETT-PACKARD and Microsoft led the list of companies that failed to patch vulnerabilities after being notified by the world's largest bug-bounty program, according to the TippingPoint Zero-Day Initiative (ZDI).

During 2011, TippingPoint — a division of HP — released 29 "zero-day" advisories that had information about vulnerabilities the company had reported to IT vendors six or more months earlier. Ten of the 29 were bugs in IBM software, six were in HP applications and five, later patched, were in Microsoft products.

Other vendors on the late-to-patch list included CA, Cisco and EMC.

TippingPoint, which sponsors the Pwn2Own hacking contest, buys information about vulnerabilities from independent security researchers and privately reports them to vendors. It uses the information to craft defenses for its own line of security appliances.

In mid-2010, TippingPoint announced that it would go public with advisories that included "limited details" of reported vulnerabilities if vendors didn't patch them within six months.

TippingPoint released its first zero-day advisory on Feb. 7, 2011.

Last year, TippingPoint said it was using the six-month deadline to push software developers to release patches faster. "By releasing some information, it puts the spotlight on vendors," said Aaron Portnoy, the leader of TippingPoint's security research team.

Portnoy and Derek Brown, a ZDI researcher, said the pressure has worked, more or less. "We've seen a better response," Brown said. "If it doesn't look like they're making a commitment to patching, we release the information."

"It puts pressure on the vendors to patch their products, because the number of unpatched vulnerabilities can change the perception of the product's security," Portnoy argued.

As of late December, TippingPoint's independent researchers generated 350 vulnerability reports, up 16% from 301 a year earlier.

– *Gregg Keizer*

Micro Burst

Microsoft's once-dominant Windows XP lost

11%

of its market share during the last four months of 2011, to end the year at 46.5%.

TECH RESEARCH

MIT Chip Models Human Brain Synapse

Forget artificial intelligence; researchers at MIT say they've figured out how to mimic the real deal.

The goal is to replicate how the brain learns new tasks. To do that, an MIT group has created a 400-transistor processor that's designed to model a single brain synapse.

The two-neuron MIT chip can't scale to model a whole working brain: Human brains contain 100 billion neurons, each of which interacts with many others. But unlike past systems that were designed to "think" like computers – they were either on or off – the MIT chip allows current to flow in a stream that ebbs and flows, just like ions do in an actual brain cell.

The researchers can "capture each and every ionic process that's going on in a neuron," said Chi-Sang Poon, the team's principal research scientist, in a story on the MIT website.

The ability to mimic different types of processes is important. Researchers hope to use the chip to build systems that model specific neural functions, such as the visual processing system – a model of which could be used to build, say, an artificial retina. These systems might be faster than traditional computers – faster, even, than real human brains. Uh-oh.

– JOHANNA AMBROSIO

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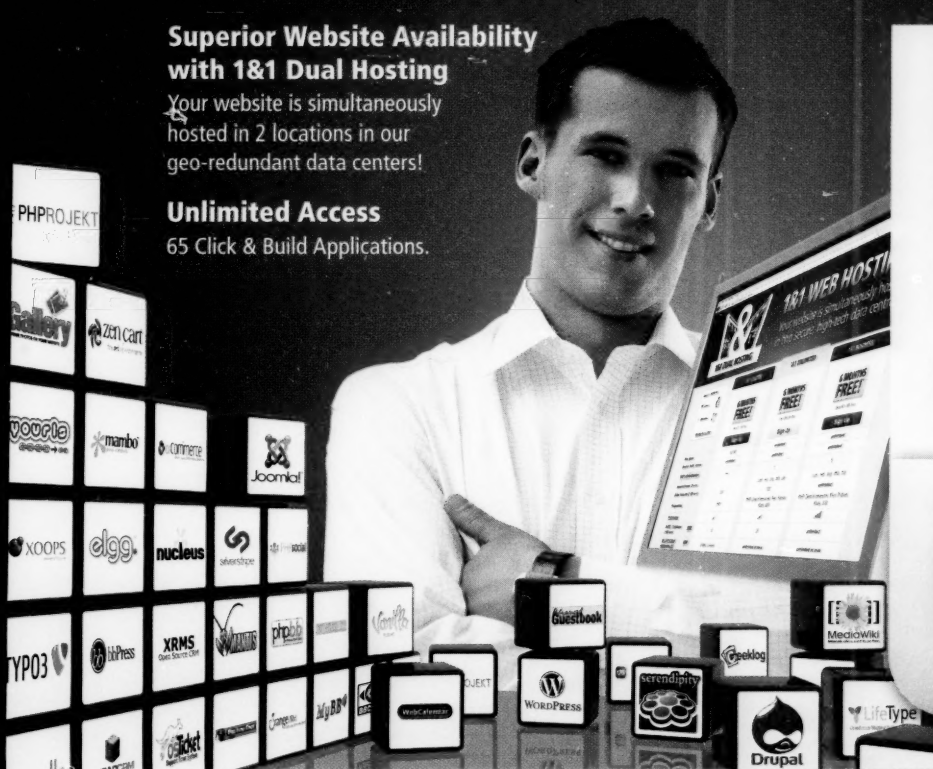

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LAPD Drops Google Apps Plan

Los Angeles city officials determine that cloud services can't meet security requirements set for accessing a key FBI database. By Jaikumar Vijayan

AFTER MORE than two years of work, the city of Los Angeles last month abandoned plans to migrate its police operations to Google's hosted email and office applications because it says the service can't meet FBI security requirements.

The city council last month voted to amend a 2009 contract calling for Computer Sciences Corp. (CSC) to undertake a wholesale replacement of the city's GroupWise email system with Google's email and collaboration services.

The amended pact cuts the Los Angeles Police Department and its nearly 13,000 employees out of the project; other agencies will continue the migration to Google Apps for Government.

The vote came last month after the city's chief legislative analyst, Gerry Miller, and its chief administrative officer, Miguel Santana, determined that the Google service could not be brought into compliance with the FBI's Criminal Justice Information Systems (CJIS).

The updated pact requires that Google pay up to $350,000 per year to maintain the LAPD's GroupWise licenses for the term of the CSC contract. Google will also substantially reduce the amount it charges for the rest of the city's use of Google Apps.

"Although CSC does not have the technical ability to comply with the City's security requirements, it should be noted that the DOJ requirements are not currently compatible with cloud computing," wrote Miller and Santana in a memo to council members.

The CJIS database is one of the world's largest repositories of criminal history records and fingerprints. Users must meet a strict set of security requirements in order to access the database.

The amendment doesn't specify how Google and CSC failed to comply with the requirements, though city officials have long expressed frustration about the project. For instance, Los Angeles CTO Randi Levin a year ago blasted Google and CSC for repeatedly failing to meet deadlines for complying with security requirements.

In April, the *Los Angeles Times* reported that the city was considering suing Google and CSC over their delay in implementing the CJIS security requirements.

Google maintains that the LAPD's security requirements were never part of the original contract and were introduced only after the project was well underway.

In a statement, Google said: "We're disappointed that the City introduced requirements for the LAPD after the contract was signed that are, in its own words, 'currently incompatible with cloud computing.' We realize this means the LAPD may not be joining the 17,000 other City employees successfully using Google Apps. Even so, Los Angeles taxpayers have already saved more than two million dollars and the City expects to save millions more in the years ahead."

Peerstone Research CEO Jeff Gould said that Google's problems may be due to FBI requirements that all IT contractor personnel pass a criminal background check and sign the FBI Security Addendum document. He theorized that European Union laws could make it difficult to get Google Apps support workers based in Europe to submit to FBI screening and fingerprinting.

Gould added that Google and CSC should have known what the requirements were because the CJIS policy document was in effect when the contract was signed.

Matthew Cain, an analyst at Gartner, said federal security requirements could pose similar problems for other cloud vendors. "Most mega-vendors utilize some offshore resources for development and operational reasons." ◆

We're disappointed that the City introduced requirements for the LAPD after the contract was signed that are, in its own words, 'currently incompatible with cloud computing.'

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Mobile Tactics Could Be Key to 2012 Election

Analysts say candidates must improve their mobile tech plans to communicate with younger voters. By Matt Hamblen

GIVEN THE EXPLOSIVE GROWTH in smartphone and tablet use over the past four years, campaign strategies for using mobile technologies could prove critical in the 2012 presidential election.

So far, analysts say, the candidates in both the Democratic and Republican parties are mostly focused on social networking and connecting to the electorate via desktop computers, apparently eschewing a stronger mobile focus until later on in the campaign.

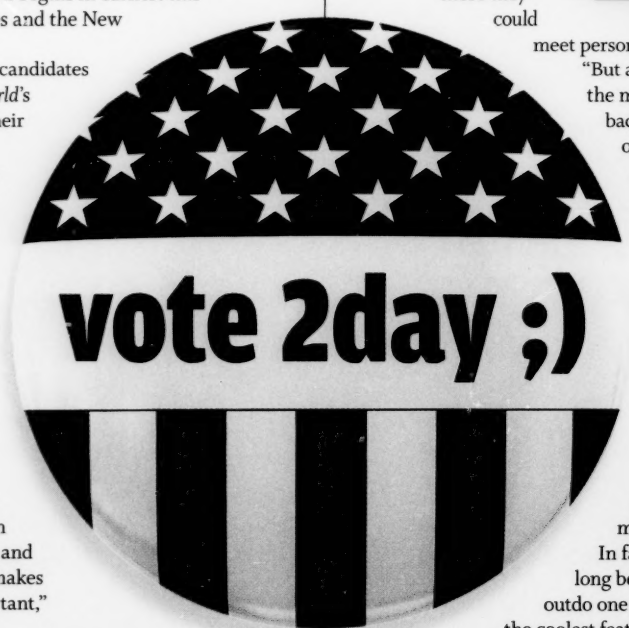
If the candidates aren't yet working hard on developing mobile campaign strategies, they'd better start soon, analysts say, as the 2012 election season begins in earnest this month with the Iowa caucuses and the New Hampshire primary.

The campaigns of multiple candidates didn't respond to *Computerworld*'s requests for information on their mobile technology plans.

Rob Enderle, an analyst for Enderle Group, noted that many Americans under age 45 are heavy users of smartphones and tablet computers, and increasingly use them as portals to Facebook, Twitter and other social networks.

"Candidates need a good social media campaign to win, and social media done right includes mobile, because mobile allows candidates to loop in supporters in the moment and stay in touch and respond in real time. Mobile makes social networking more important," Enderle said.

"The candidates probably need content that fits the smaller screen, or that's an audience they are not speaking to," he said, noting that "a few hundred thousand people could swing a state."



Experts said that the major political parties should be expected to offer candidate-focused apps via Apple's App Store and the Android Market at least by the time the two nominees are chosen this summer.

Today, Apple's App Store lists hundreds of news and social-media-related apps, but a recent search found none related directly to a single presidential candidate.

There are mobile apps designed to help sports fans follow the NCAA's annual college basketball tournament, "so why not have similar apps to track campaigns?" asked Bill Dudley, group director of product management at Sybase365 and a self-described mobile guru. "There would be lots of mobile engagement for candidates and news organizations to track."

Jack Gold, an analyst at J.Gold Associates, said savvy political organizers need to decide if virtual handshakes in the form of mobile Facebook or Twitter posts are adequate substitutes for meeting and greeting voters in person.

> There's a fine line to balance with the candidate's need to stay in touch with supporters **and [becoming] a nuisance.**"
>
> ANALYST, J.GOLD ASSOCIATES

"Certainly mobile extends the reach of the candidates [to far more voters] than those they could meet personally," Gold said. "But at some point," he warned, "does the mobile message just become background chatter? If I get tons of their messages, I'm likely to just discount all of them and tune out. There's a fine line to balance with the candidate's need to stay in touch with supporters and [becoming] a nuisance."

Dudley, who compiled a 2012 mobile industry forecast predicting that mobile strategies will be a "major means of trying to win votes" in 2012, said he expects that candidates will begin using the technology more actively in coming months. In fact, he predicts that it won't be long before campaigns start trying to outdo one another by seeing who can offer the coolest features and find the most creative ways to engage potential supporters.

Come springtime, "you'll see a lot of mobile campaigning" by presidential candidates, Dudley predicted. If not, he added, "they're dead." ◆

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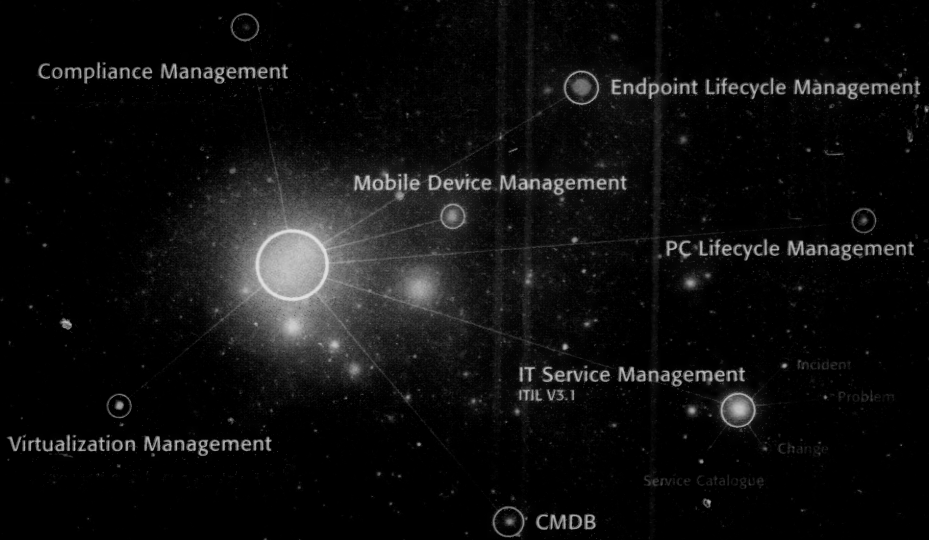

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THE Grill

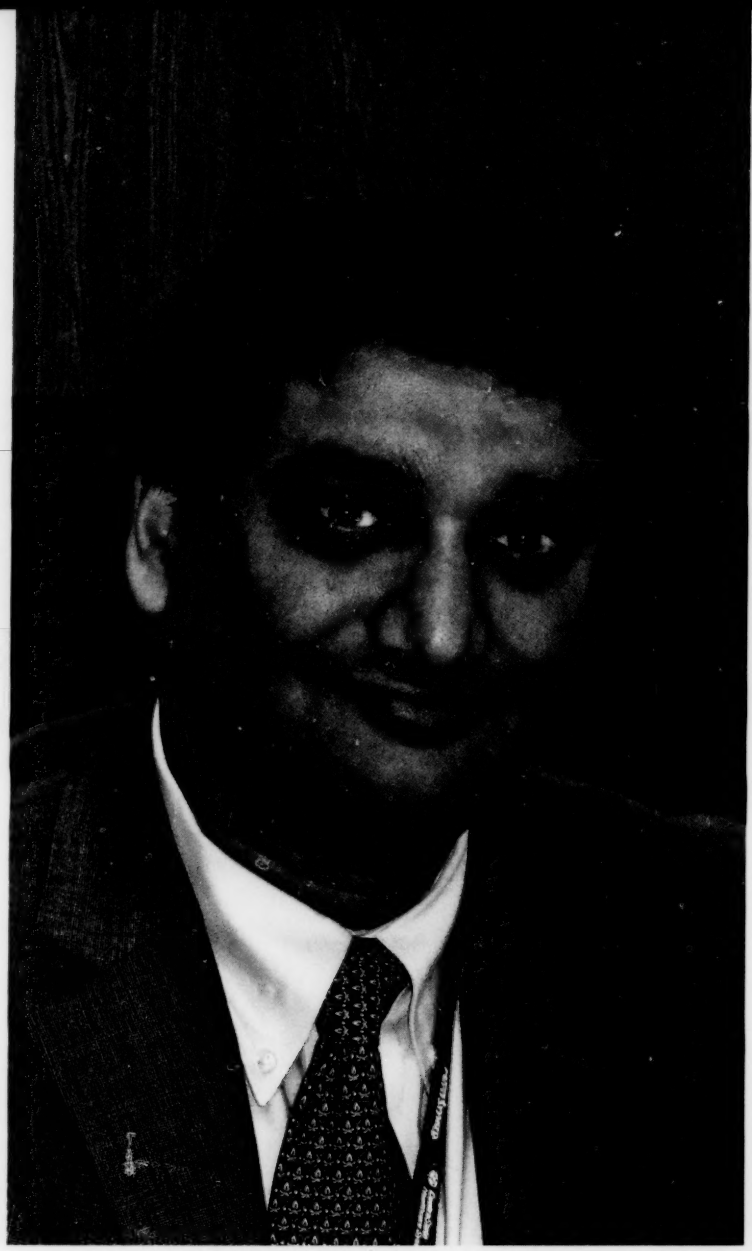
Indranil Ganguly

His leadership in healthcare IT is helping to shape public policy.

What's your proudest achievement to date? My kids are my proudest achievement. I have two sons, 16 and 12.

What's your favorite technology? My tablets. I have both an iPad and a Motorola Xoom. I use them for different reasons, but I prefer the Xoom. I like the interface better. I like some of the apps on there better. The iPad is much better as an entertainment device, and the Xoom is better as a work device for me.

How do you spend your free time? Hiking, biking, spending time with my family, which means driving them around.



INDRANIL "NEAL" GANGULY, *vice president and CIO at CentraState Healthcare System in Freehold, N.J., says he and his colleagues in healthcare IT have an opportunity to make a real difference. CIOs and their teams have a strong grasp of what benefits technology can bring to the medical field, he says, and they should help shape healthcare policy. Ganguly is helping to do just that, serving in leadership roles with various trade associations. The College of Healthcare Information Management Executives (CHIME) last fall recognized his contributions by presenting him with its State Advocacy Award. "As the healthcare industry enters a period of great change, it is more important than ever for CIOs to get engaged in the public policy process," he says. Here he shares more of his thoughts.*

What has been the biggest change regarding the role of technology in healthcare during your 12-year tenure as CIO? That technology has been really ingrained in

Continued on page 12

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Continued from page 10

healthcare operations. When I first got here, when there was a network issue, it was an inconvenience. It was a hassle, but everything was manageable. Today it's mission-critical; the technology has become a key driver in supporting the care-delivery process.

How did that change affect your job? It has increased the visibility of the IT function. Now everyone knows who the IT guys are. And that puts some unexpected pressure on the group that you have to find ways to relieve. The other change is demand. Look at the amount of technology we've deployed to our users, our customers. Before, they were simply accepting of the technology, but now the awareness of what technology can do for them has been raised to a point where they're asking for new technologies and enhancements. That's created a demand curve that's very steep, but our resources for providing that haven't increased as steeply. So the challenge for us as IT leaders is demand management.

> **CIOs are uniquely qualified** to step up and educate the legislators, so they don't put out rules that are unattainable.

You've talked about the importance of CIOs playing a role in public policy. Why is it important? CIOs shouldn't be just technologists. Most of us aren't. We're businesspeople who first and foremost understand how technology can impact the business. And we're seeing now the federal and state governments' drive to transform healthcare. We know that the large industry players, both private and public, are looking for ways to make healthcare delivery more efficient while trying to improve or maintain effectiveness, and they've pinned a lot of hopes on technology. But I think there's a gap between the theory of technology deployment and the reality of it, and CIOs are uniquely qualified to step up and educate the legislators, so they don't put out rules that are unattainable.

As a CIO and a business executive, what are the key skills you need? You have to understand the business of healthcare and how technology plays a role. The CIO's team touches the entire healthcare organization unlike any other healthcare executive. We're uniquely positioned to have that big picture of the organization. You have to be able to communicate complex concepts in an easy manner. You have to be diplomatic. You need discipline around demonstrating value. Those are some of the key skills as CIOs. How does it prepare us for the advocacy role? It all lends itself to that education mission.

The HITECH Act promotes "the adoption and meaningful use of health information technology." How do you define "meaningful use"? Very simplistically, being a meaningful user of technology means [answering yes to these questions]: Are you getting value from the technology? Are you getting value for patients, caregivers and the organization as a whole?

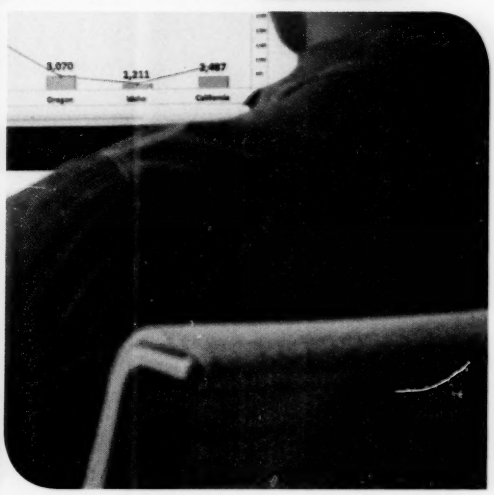
Have you achieved meaningful use in your own organization? We have. We attested for Stage 1 [under the federal HITECH Act] in September. I'm waiting for that big check to come. The calculations that were done by our finance folks show that we're entitled to $2.7 million, approximately.

What were the challenges to achieving that goal in your organization? The key challenges were around getting my customers, the end users, to come to the table to participate in implementing the technology. Most viewed it as, "That's IT's responsibility. Just tell me when you're done." But they now realize if they don't participate, the system isn't optimized to meet their needs. Then you have to change the culture, how they work on a daily basis, to maximize use of the technology. That's been the greatest challenge. An interesting side note to that: Sometimes changing culture means some people have to do more work than before and not realize the value themselves but see the value to the organization as a whole.

What about achieving meaningful use overall as an industry? What obstacles remain? At CentraState, we're fortunate to have kicked off a strategy and implemented a lot of technology before meaningful use came to be, so that put us in a good position. So I think that's one of the challenges for others. I think we're also seeing a growing shortage of skilled labor to get the work done. As more and more are pushing to implement technology, the pool of labor who understands the technology is being gobbled up. And that whole cultural change — that's real, too. You've got to get these clinicians to buy into changing their work, and that's not trivial.

– *Interview by* Computerworld *contributing writer*
Mary K. Pratt *(marykpratt@verizon.net)*

Microsoft



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OPINION

PRESTON GRALLA

Microsoft's App Blitz Bodes Well for Its Future

ONCE UPON A TIME, Microsoft would rarely release a product on a competitor's platform. Those days may be over. At the end of last year, Microsoft launched a blizzard of apps for iPhones, iPads and Android phones. That's good news for anyone who cares about the company's future.

Offering apps for iOS and Android is a way for Microsoft to keep existing customers happy while attracting new ones.

The app blitz was noteworthy not just for the breadth of the apps Microsoft released, but also because many of them were tied to core Microsoft products or services for which the company expects big growth in the future.

Consider one of Microsoft's most successful big-growth consumer products in the past several years, Xbox 360, which is aimed at an important demographic: gamers. In years past, Microsoft tended to use such a foothold to help promote its own products exclusively and not help any competitors. If Microsoft were still thinking that way, it would release Xbox 360 mobile apps only for Windows Phone 7, in hopes of spurring Xbox 360 users to buy Windows Phone 7 devices.

Surprise! Near the end of 2011, Microsoft released several Xbox 360 mobile apps not just for Windows Phone 7, but for Apple's iOS platform as well. There's My Xbox Live for iOS, which lets gamers use Xbox 360 features on iPads and iPhones. There's also an iOS version of Kinectimals, a game that lets people interact with virtual pets, and Halo Waypoint for iOS, a companion to Microsoft's mega-selling Halo game.

Microsoft didn't just target gamers, though. It also released apps right in its sweet spot of business users and the enterprise market. It released iOS and Android versions of a mobile app for Lync, its unified business communications service, and it updated its existing iOS OneNote app, improving it in a variety of ways, including taking advantage of the iPad's larger screen.

Other releases include a SkyDrive iPhone app for browsing Microsoft's cloud-based storage service and a tag reader app for the iPhone and Android devices that can scan QR codes and also read NFC signals.

All these apps, of course, are also available for Windows Phone 7. But by making them available on competing devices as well, Microsoft has shown that it recognizes that it can't own every customer completely and that people are likely to use multiple platforms for multiple purposes. It's facing up to the cold fact that someone who uses Xbox 360 is more likely to own an iPhone or an Android device than a Windows Phone 7 device simply because Windows Phone 7 has such a small user base.

Releasing iOS and Android apps is a way to keep existing customers happy while attracting new ones. Having an Xbox 360 app for iOS and Android devices becomes a selling point for people considering buying a gaming system.

The same holds true for the enterprise market. Companies will more likely want to use a service like Lync if it supports a wide variety of mobile platforms. And this also holds true in the vast market for Internet-connected consumers. If Microsoft wants SkyDrive to succeed against competitors, it needs to deliver apps for the devices that the greatest number of people use.

All of this bodes well for a healthy Microsoft. The days when a company, even a massive one like Microsoft, could go it alone are long gone, and Microsoft seems to recognize that. ◆

Preston Gralla is a *Computerworld.com* contributing editor and the author of more than 35 books, including *How the Internet Works* (Que, 2006).

TECH BRIEFCASE

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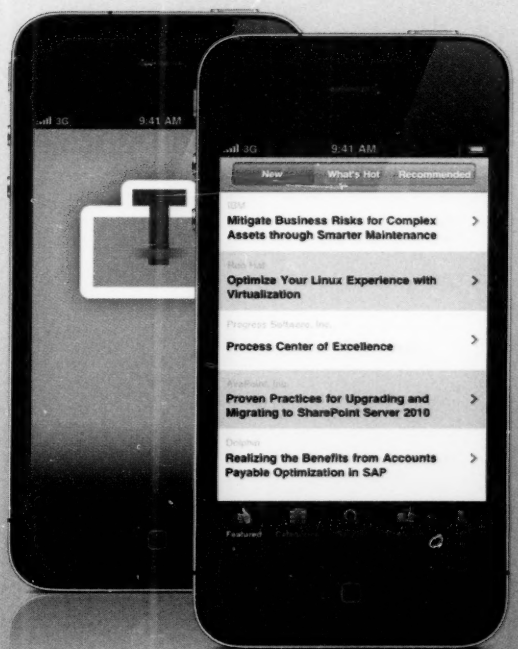
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Self-Service IT

Empowering users with do-it-yourself tools is all the rage in IT these days. What could possibly go wrong? By Tracy Mayor

SELF-SERVICE PROCUREMENT. Self-service business intelligence. Self-service recovery. User provisioning in private clouds. It's a wondrous world for end users today as IT departments roll out tools that hand them the reins to the data and services they desire, whether it's instant access to their employee benefits accounts or a deep dive into corporate data stacks that were once off-limits.

But all this user empowerment raises a question: Are users up to their new role? To be sure, it's been a long time since IT staffers have had to show employees how to use a mouse or check that a desktop PC is plugged in, but there's a big jump between choosing a dental plan from a drop-down menu and applying advanced analytics to large volumes of enterprise data.

Have users really advanced so far that they can roll out their own business intelligence queries or recover from a hard disk failure entirely on their own? Yes and no, say IT managers and industry analysts.

PHOTO BY GETTY IMAGES/ CHRIS STEIN

On the one hand, thanks to the boom in smart consumer devices and the ubiquity of the Internet in corporate and personal life, employees at all levels of the organization are more comfortable with technology than ever before.

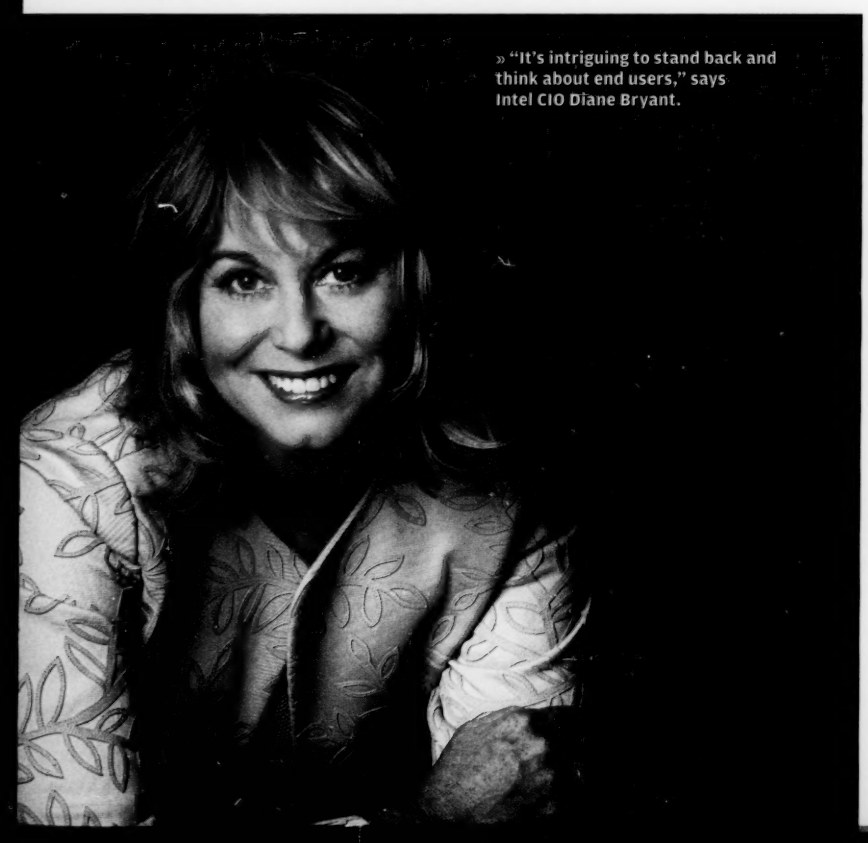
On the other hand, the U.S. workforce is now 20-odd years into a decline in expertise in science, technology, engineering and math (the so-called STEM disciplines), according to the National Research Council and other education observers. If you include statistical analysis in that skill set, the decline potentially sets the stage for a perfect storm in self-service IT, where overconfident but underskilled end users run amok in business systems, draw bad conclusions from randomly mashed-up data or corrupt IT's once-pristine data stores.

"Some employees — particularly the younger members of the workforce — have an attitude of 'give me access and I'll figure it out,' but there are nuances to data that they may not realize," observes Cindi Howson, founder of business intelligence consultancy BIScorecard. "Some start out quite cavalier in their efforts, then get to a certain point and have to call for help."

That said, Howson believes such failures are a necessary part of the process as IT, business units and end users renegotiate the delicate balance of who can do what when it comes to corporate data.

After years of tight control by IT, the pendulum is swinging the other way — "sometimes maybe a little too far the other way," Howson says. Nevertheless, the move toward self-service is only going to accelerate, she and other analysts say, as IT departments face increasing demand, from the newest hire to the most senior executive, for faster, better access to corporate services and data. "IT cannot keep up. They need to be delivering intelligence faster and in a way that's more aligned with the business than what they've been able to deliver in the past," she says.

To gauge IT's handling of this new breed of customer, *Computerworld* checked in with three organizations — The Kentucky Community and Technical College System, Intel and Mitre — that serve three different user constituencies. Here's a look at how they're handling "End User 2.0."



» "It's intriguing to stand back and think about end users," says Intel CIO Diane Bryant.

Kentucky Community and Technical College System:
Serving a Diverse Group of End Users

With 16 colleges in 70 locations serving an estimated 130,000 faculty members, staff members, and students, KCTCS supports a broad swath of users.

KCTCS uses Oracle's PeopleSoft Enterprise Human Capital Management system to roll out self-service components to its various user constituencies, says CTO Paul Czarapata. PeopleSoft's Campus Solutions application allows students to enroll in classes, pay their bills and make scheduling changes. Czarapata says that module is relatively easy to administer, for two reasons.

First, he says, "the students really don't have that many mind-boggling choices — they can see if they're admitted to a class and pay for it. Everything else is on Blackboard" — a separate student-services system, widely used in higher education, that also incorporates self-service as a cornerstone. Second, "students pick up on [self-service] quicker than employees do," he adds. "For the most part, they're a little more technically savvy and used to doing things for themselves."

This past October, KCTCS rolled out an ambitious online benefits-enrollment system that relied heavily upon self-service options, a big change for KCTCS employees. "We've got a super-complex HR system," Czarapata acknowledges. "On the HR side, we've got a lot of choices." Change management and communications were critical to achieving a smooth rollout, he says, "especially since we had to reach 68 locations."

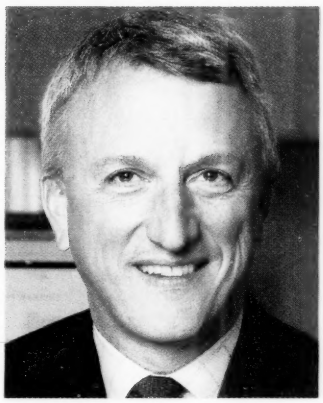
In trying to ensure that the benefits system matched the technical expertise of its users as it was being developed, KCTCS did have one advantage: "We do know who our employees are, as opposed to a business trying to attract customers online," Czarapata says.

Another plus: Having worked together closely on other projects, IT developers generally agreed with HR's assessment of users' abilities — and when they didn't, they felt free to make suggestions or ask questions. "Other times, IT might not push back as much, but on this project, most of the people have worked with each other for a long time," Czarapata says. "[IT's] role was to look at designs, follow the flow-through and establish filters to determine who gets the appropriate data," most of which was done in concert with the lead systems person from the HR side.

His advice to other organizations developing self-service systems for users with a wide range of abilities is: "Pilot, pilot, pilot." With a small group of test users, KCTCS developers were able to identify "land mines" and figure out where users needed more or different information, and do so quickly. "A small pilot means a faster feedback cycle," Czarapata points out.

Overall, Czarapata finds that end users today tend to have high expectations that internal systems will look and act like the consumer Web applications they're familiar with — an expectation he sometimes has difficulty fulfilling.

"It's not that big a deal for a Twitter or a Yahoo to be constantly tweaked, but monolithic ERP stacks don't change as rapidly on the UI side as today's generation expects," he laments. "We're kind of at the mercy of the vendor about how the self-service components work. The functionality to do everything [users] need to do is in there; it just looks clunkier than they'd like."



> "It's easy to wind up with people just drowning in data that they don't know how to make good use of."
>
> **JOEL JACOBS,** CIO, MITRE

Intel:
'Four Big Buckets' of Self-service

"It's intriguing to stand back and think about end users," says Diane Bryant, CIO and vice president of Intel. "When you look at tech trends, you see that IT has been delivering greater and greater capabilities into the hands of employees over the years."

At Intel, self-service initiatives can be roughly categorized into "four big buckets" — traditional help-desk capabilities, BI, Web publishing and infrastructure as a service.

Some initiatives, like self-service tech support, are designed for all of Intel's 93,000 employees, who, even at a high-tech company, encompass a wide range of skills. "We roll things out and some will dabble, some will be far more curious and more aggressive in pushing the limits of the tool, and others will shy away," says Bryant.

"We have a workforce that has a long tenure," she elaborates. "People coming into Intel tend to be more comfortable with these new ways of operating, but there's always a base of employees that isn't comfortable." As the solutions mature and more and more rank-and-file employees adopt them, "the rest of the users eventually get swept in," Bryant observes.

Self-service systems that are targeted toward specific groups of employees, on the other hand, tend not to face that kind of adoption lag, Bryant says. The company's new Web publishing system, for example, allows its approximately 2,000 corporate marketing employees to create and self-publish content for Intel.com.

Likewise, self-service BI solutions give salespeople access to analytics on customer leads and allow senior financial analysts to run what-if scenarios to determine where the company's financials are going to land for the quarter.

Those types of self-service systems typically take off much more quickly than others, for two reasons, Bryant says. First, the user community is largely made up of high-level, highly skilled employees. And second, the tools themselves have evolved to the point where they can accommodate users' expectations without sacrificing quality.

"BI tools have matured to the level where you don't have to have a master's degree in computer science [to use them]," she says. "They respond to the employee request. You get better access to the data, converted into formats that users are familiar with."

In her experience, Bryant says, the biggest question around self-service isn't whether users can handle a new system; it's whether business-unit managers can sell the merits of the system effectively enough that users will adopt it willingly.

"When you tell people you're going from a single point of control to a self-serve model, you are changing an existing business process," Bryant says. "Senior leaders often underestimate how hard that is. IT can't tell the sales force to start doing things differently. The business side needs to educate them on how this change will make them more productive."

Mitre:
Early Adopters, Demanding Users

When asked about the technical skill level of his typical employee, Mitre Vice President and CIO Joel Jacobs deadpans, "Are you familiar with Mitre?"

Indeed, the not-for-profit research lab, originally founded by people who worked at MIT's Lincoln Labs, employs some 7,000 scientists, engineers and support specialists, of whom 65% hold a master's or doctoral degree.

"There's a high probability of the [end user] being technically oriented in computer science or engineering," Jacobs says. "Their ability to cope is pretty high."

Mitre was among the earliest organizations to embrace the Internet and the Web. "We had those funny characters" — meaning email addresses — "on the bottom of our business cards 20 years ago," Jacobs recalls. Launched in the early 1990s, the organization's intranet, Mitre Information Infrastructure (MII), is well integrated into the corporate culture.

In two decades, MII has evolved to include a high level of self-service access to a range of corporate tools, including time cards, travel expense reports, and almost all HR changes and transactions except those that are required by law to be on paper.

An upgrade in early 2010 now allows Mitre to push role-based content out to users via a "my actions" gadget that resides on users' personalized home pages. One user's actions may include completing a time-off request or installing a security patch to her computer; another's may prompt him to authorize the public release of a particular document or approve a procurement request.

Beyond that, when developing other self-service applications,

Mitre has a fairly well-established process that takes place between IT and an identified data owner within a business unit to determine which employees get access to what data. Even then, it can take a few tries to get it right.

"Often, the first request is for some raw feed, but it's easy to wind up with people just drowning in data that they don't know how to make good use of," Jacobs explains.

Rather than having the business side tell IT what data they think they need, he prefers that they frame their request in terms of what decisions they need to make. "Instead of saying 'I need XYZ data set,' if they say, 'I need to better manage this part of my cost structure,' then we can tell them what data is available and guide them to what will be most useful," Jacobs says.

If there is a downside to having a sophisticated workforce, Jacobs says, it's that users can be intolerant of poor user interfaces or unnecessarily clumsy processes — some of which can't be avoided when adapting off-the-shelf software. When IT designs a new system at Mitre, "our expectation isn't that [users] can't figure things out — our user population can figure things out — it's that they don't want to spend their time navigating obstacles," Jacobs says.

> **"Monolithic ERP stacks don't change as rapidly on the UI side as today's generation expects."**
>
> **PAUL CZARAPATA,** CTO, KENTUCKY CTCS

Hurdles to Keep in Mind

IT managers and others agree that successful self-service implementations come from equal partnerships between IT and the line of business that's requesting access to data or services. That's not always easy, of course, but keeping a couple of hurdles in mind during the planning stages can help.

The biggest challenge for IT is to keep tight control over the integrity of corporate data, while still giving appropriate users enough access to allow them to actually accomplish their goals, says Forrester Research analyst Boris Evelson.

"The best scenario is a win-win when you divide the analytics application stack into multiple components — data foundations, integration, quality assurance, persistence, warehousing. IT still has to be responsible for those, and for security and robust disaster recovery," Evelson says. "If IT says, 'We are in full control of that' — if they can say the data resides in one logical place that's securely integrated — then sure, let users have a field day."

IT should also have a fully nuanced understanding of exactly which user community it's being asked to serve, says BIScorecard's Howson, who recognizes that certain types of BI tools best serve different types of users. A power user, for example, could probably handle an advanced data-analysis program like Microsoft PowerPivot, while an executive would work best with an interactive dashboard and a front-line worker might need just an interactive report that lets him tweak and re-chart certain rows and columns of data.

Matthew Ripaldi, a senior vice president at IT staffing and recruiting services firm Modis, says he's confident that today's workers are able to handle self-service analytics. He's more concerned that not every IT employee has the softer skills necessary to sufficiently define the scope of a project.

"Requirements-gathering requires good listening skills. You need someone who can say, 'What do you want this system to do? What analysis are you trying to accomplish?' and then translate that into a tech solution," Ripaldi says.

In cases where the IT staffers assigned to the project are more "black-and-white tech people," Ripaldi recommends bringing in a business analyst — from the business side or as an outside consultant — to ensure communication stays on track.

In the end, Forrester's Evelson finds it useful to put the self-service movement in context. Yes, self-service access to enterprise data gives users power and flexibility they haven't had before, and yes, that requires a higher level of control on IT's part, he says.

But by the same token, these new systems are part of a trend that's been building ever since computers became personal. "Business users have been using spreadsheets since the day they were invented. If you think about it, [Microsoft] Excel is still the No. 1 BI tool out there." ◆

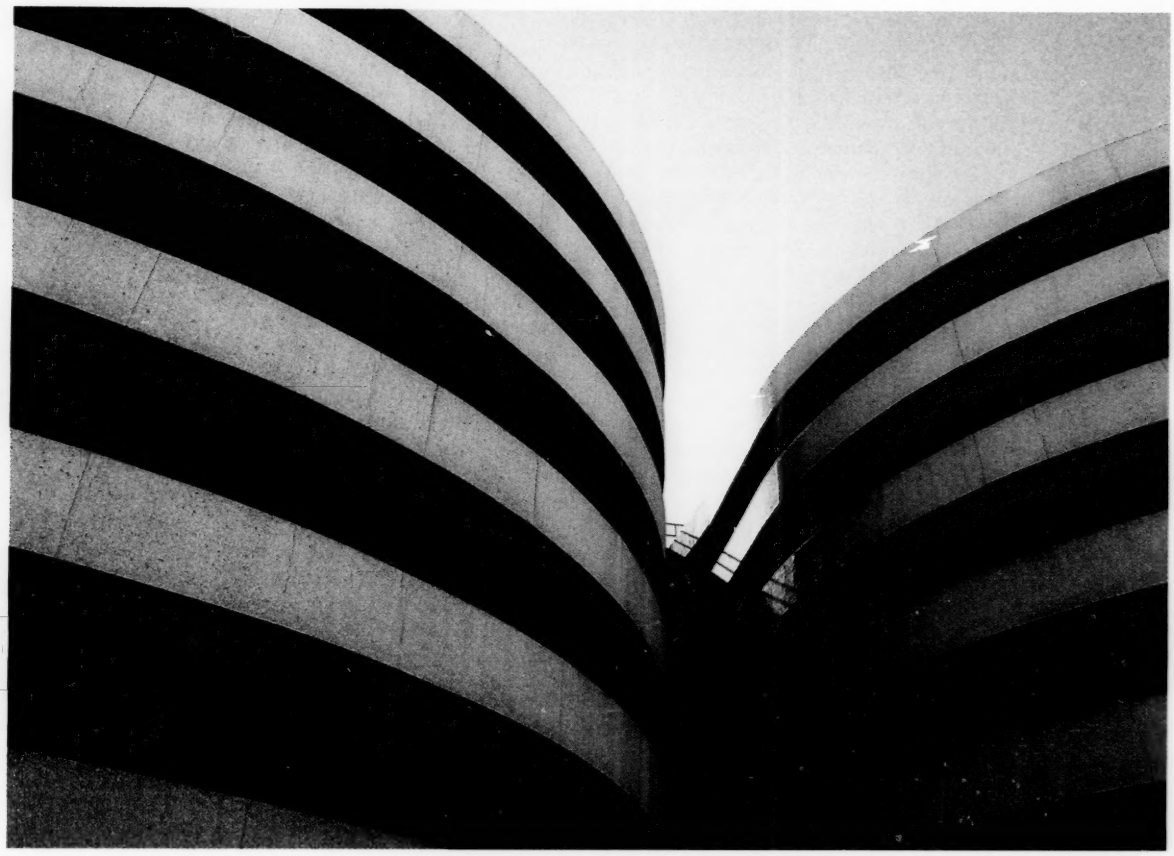
5 Tips for Successful Self-service IT

How do you do self-service IT right? Tech managers and analysts say the goal is to empower users without overwhelming them – and without putting corporate data at risk. **Here are their specific tips:**

1. Retain tight control over corporate data. User access to that data is important, but a user's need for data should never take precedence over security, privacy or regulatory compliance concerns.
2. Know the people you're designing for. Users with different roles and technical skills may need different types of tools.
3. Rather than asking business users what data they think they need, ask them what decisions they need to make or what tasks they need to accomplish.
4. Consider bringing in a business analyst during the project's planning stages to facilitate communication between business users and IT.
5. Test with a small group of users to quickly identify and address trouble spots.

Change management is crucial to a successful rollout of self-service tools. Line-of-business leaders – not IT – should explain to users how the tools will benefit them.

– TRACY MAYOR



Grow Your **Data Center** With **COLOCATION**

It's quicker and a lot less expensive than building your own facility.

BY JOHN EDWARDS

BRIAN BURCH knew the moment had arrived. Two of his data center's key services — availability and business continuity — needed fast and dramatic improvement. Design and location limitations meant that his company's existing data center couldn't be upgraded to the levels necessary to provide the improvements in functionality and performance that he required.

GETTY IMAGES / GREG KESSLER

So Burch, senior worldwide infrastructure director of Kemet Electronics, a capacitor manufacturer headquartered in Simpsonville, S.C., decided it was time for his data center to split.

Even in today's challenging economy, enterprises are facing rising internal and external demands for IT services. When an existing data center can no longer handle an organization's IT burden, or when it becomes necessary to establish a secondary site to provide enhanced disaster recovery capabilities or regional network support, an important decision point has been reached.

For a number of enterprises, the obvious solution is to add another data center, and for many of those it means partnering with a colocation service provider instead of building a new facility of their own.

If you're considering colocation — or colo, for short — it's essential to do your homework, experts say (see "Colo 101," page 23). "You absolutely need to do the buy-vs.-build analysis," says Jeff Paschke, an analyst at Tier1 Research. But having said that, he suggests that "buy" may often be the best choice. "I am a former enterprise data center manager, and from what I know now, more should be using [colocation facilities]," he says.

Financial considerations may play the biggest role in colocation decisions. "Do you want to go to your board and ask for $50 million in capex [capital expenditures] for another data center?" Paschke asks. "The alternative is to go to a provider and use opex [operating expenses] and not have to spend money upfront."

Once you see you're beginning to run out of space, run out of server capacity, [or] when you're looking to add or upgrade an application, that's when you begin to look outside.

LYNDA STADTMUELLER, DATA CENTER ANALYST, FROST & SULLIVAN

Given the massive investments of time and money required to build a traditional data center, "fewer organizations are deciding to build their own satellite data centers," says Lynda Stadtmueller, a data center analyst at technology research company Frost & Sullivan.

In a trend that's especially prevalent among operations that use time-sensitive applications that require a local presence, more and more organizations are leasing space from a colo or hosting provider rather than building and managing their own data centers, she explains.

Outer Limits

Most organizations begin thinking about adding a data center as soon as their existing facility starts maxing out its physical space or support resources, Stadtmueller says. "Once you see you're beginning to run out of space, run out of server capacity, [or] when you're looking to add or upgrade an application, that's when you begin to look outside."

Sometimes the push comes in the form of a business need — a new initiative that, for instance, requires a lot of extra computing capacity, or enough to force your existing data center to use a lot of extra electricity. Power is usually the gating factor in many older data centers: Enterprises tend to run out of power options long before they run out of space.

For many organizations, the idea of building a second site often arises from a desire to create, enhance or cut the cost of a business continuity strategy. "With our new site, we really wanted to improve on the [recovery] time from any kind of failure," Burch says. Kemet also wanted to get out of a costly relationship with a disaster recovery services provider, he adds.

Licking Latency

Another motivation for creating a new data center is to boost system responsiveness for employees and customers in remote locales. Organizations running latency-sensitive network applications — those that power retail and travel websites or financial services, videoconferencing and content distribution systems, for example — usually like to place their applications as close to end users as possible to improve response times. By splitting a data center into two or more sites, an organization can more efficiently serve people scattered across a wide area — even if they're on multiple continents.

Dayton, Ohio-based LexisNexis, known for its legal research and workflow services, decided in 2009 to establish a colo data center in Scottsdale, Ariz., to better serve customers from a location that's relatively immune to storms, earthquakes and other natural calamities. "We wanted something that was in the western region of the U.S.," says Terry Williams, the company's vice president of managed technology services. "Location was a huge part of our decision." The company already had a data center in Dayton.

Not surprisingly, network availability and performance were essential considerations for LexisNexis as it went about choosing the new site. "The key for us is network connectivity," Williams says. "That was something that couldn't be compromised on."

LexisNexis is hardly the only organization that wants to set up data centers closer to end users for better service, says Darin Stahl, a data center analyst at Info-Tech Research Group. "There's a definite move toward decentralization, and that's helping enterprises that want to open additional data centers," he says.

Williams says that turning to a colocation provider — Phoenix-based IO Data Centers, in his case — didn't require LexisNexis to compromise on any services or amenities. "We expected all of the normal things that a high-tier data center would have in terms of backup

Colo 101

BY ONE analyst's count, there are more than 400 providers of colocation services offering a huge range of options and prices.

Colocation is different from traditional hosting, which IT folks may be more familiar with. In a hosting situation, usually the service provider owns the hardware, software and other infrastructure that serve up your applications. Providers can specialize in different types of services — application hosting, website hosting, database hosting and the like. In contrast, colocation customers own their servers, routers and other hardware and often have their own employees tend to this gear.

Some colo providers specialize by going after small and midsize businesses, financial services firms or other categories of customers.

There are two general types of colocation providers: wholesale and retail. Wholesale colocation providers maintain large facilities — big enough to handle 10,000-square-foot data centers, for example. Except for the power and cooling infrastructure, it's essentially empty space. The customer, or tenant, does the work of rolling in the servers and racks, cabling up the gear and making sure it all works.

On the retail side, spaces are usually smaller — down to "cages" that hold individual servers, for example — and the vendors offer more setup help, for a price. In general, says Jeff Paschke, an analyst at Tier1 Research, you can expect to pay more for retail colocation than a wholesale offering.

Also, be on the lookout for the ever-present upsell. Darin Stahl, an analyst at Info-Tech Research Group, says many vendors are eschewing "straight" colo and will provide only managed services, where the vendors service and support the customer's equipment. They do that because managed services can yield margins of "at least" 25%, he explains.

The bottom line is this: Make sure to look for a colo partner that's going to give you what you want — no more and no less.

— JOHANNA AMBROSIO

power, generators and all of those things, as well as network connectivity," he says.

For his part, Burch feels that using a colocation service — Kemet Electronics chose Columbia, S.C.-based Immedion — allowed a faster, less costly deployment without sacrificing convenience or functionality. "We were able to get everything set up within a two-month period, and that included the building out of office space, even converting some office space into raised-floor data center space, which is pretty amazing."

Finding a suitable colocation provider can be just as challenging as scouting a site for a traditional data center. "We looked at taking a building and converting it ourselves," Williams says. After deciding that overhauling a stand-alone building wouldn't be cost-effective, LexisNexis started looking for a colocation provider. "I would say that we probably spent six months searching for a site, and we probably looked at no less than 30 different locations and providers — it was a very extensive search," he says.

Space at a Premium

Of course, colo space can be tight in some locations, so expect to pay a premium in those areas. Tier1's Paschke explains that the economic slowdown and resulting credit crunch put the kibosh on a lot of data center capacity build-outs. Many enterprises put their own data center construction plans on hold, and colos reined in their expansion activity as well. So nowadays, organizations considering turning to a colo may find that the vendors don't have as much data center space as they need.

Of course, the market for data center space varies from location to location. A recent *Wall Street Journal* article, for instance, talked about an oversupply in the

GETTY IMAGES / PAUL TAYLOR

New York-New Jersey area. In general, though, many analysts say there's an undersupply of colo space in key locations.

One reason this is important is because some shops opt to have their second data center near their main facility so they can stay close to their gear. Paschke calls the people who run these shops "server huggers" — IT executives who want to be able to reach out and touch their servers, even though the goal in most data centers is to automate much, if not all, of the systems management. If your main office is in a high-demand area, it might be difficult to find a nearby colo facility.

More factors to think about when going colo include deciding upfront what you're willing to pay for. Some customers need mega-bandwidth for instant response times and require stringent service-level agreements, and some choose to have telecommunications links to several providers for backup purposes, in case one telecom vendor goes black. Others aren't so concerned. "Some people don't care; milliseconds don't mean that much to them," says Jonathan Hjembo, senior analyst at TeleGeography Research. "Customers just need a ridiculous amount of different things," he notes, adding that such diversity is pushing the market forward.

The key for us is network connectivity. That was something that couldn't be compromised on.

TERRY WILLIAMS, VICE PRESIDENT OF MANAGED TECHNOLOGY SERVICES, LEXISNEXIS

Other considerations include security — both physical and virtual — and backup infrastructure, including power, cooling, fire suppression and the like. Customers also need to discuss their future needs with their would-be colo partners, to make sure the vendors will have enough space for the customer's anticipated needs for the next few years. And be sure to do a financial analysis.

Staffing Issues

When somebody mentions "colocation," a lot of IT staffers hear "outsourcing" — and naturally begin to worry about losing their jobs or influence, analysts say. "People are resistant to change," says Tier1's Paschke.

If you choose to go the colo route, your staff will probably need some time to get comfortable with the idea. Info-Tech's Stahl suggests an evolutionary approach in which you begin by using a colo facility as a backup data center and later use it to handle more critical, first-tier kinds of hardware, storage and applications. "Once that happens, customers start to wonder whether it's the best use of a server admin to go to the colo facility and mess around in the cage for a day," he says. At that point, the company may be ready to consider managed services for some of its IT functions.

A staffing issue that's often neglected until the last minute is the need to hire qualified people to work at a secondary data center, says LexisNexis' Williams. Sometimes enterprises opt to use the colo vendor's on-site experts, but other times they simply lease space within the facility and staff it themselves.

"Obviously, you're going to do local hiring," Williams says. But he notes that a remote data center has different staffing needs than a primary site. Since secondary data centers generally don't have as many management and administrative jobs as main sites, hiring tends to focus on technical individuals who can easily move between multiple tasks. "You want a small staff that can actually do a number of different things," he advises.

Still, Williams notes that LexisNexis had no shortage of Dayton data center staff members volunteering to transfer to the new location. "If it's in a nice location like Scottsdale, everybody is raising their hand to move out there," he says.

For most enterprises, adding a colocated data center is usually a significantly easier task than creating a primary site from scratch. In most cases, established platforms and practices can be replicated fairly painlessly at the new location. Kemet used its main data center as a staging area for the new site.

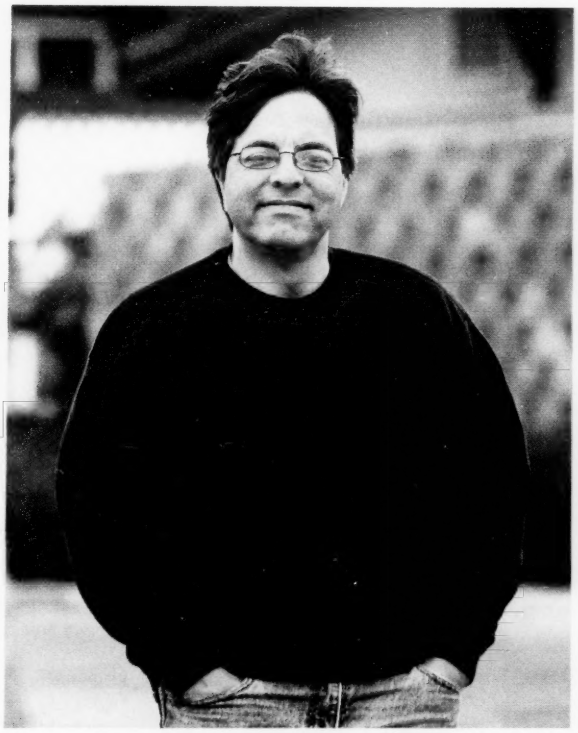
"To ease the transition, we actually built all the new equipment in our primary data center," Burch says. "We synchronized all the data that was going to be replicated at the new site and conducted some tests to make sure everything was going to work the way it was supposed to." The equipment was then transported to the new data center. "We then simply turned it on and just let it catch up on what it had missed in the eight hours it had been in transit," Burch says.

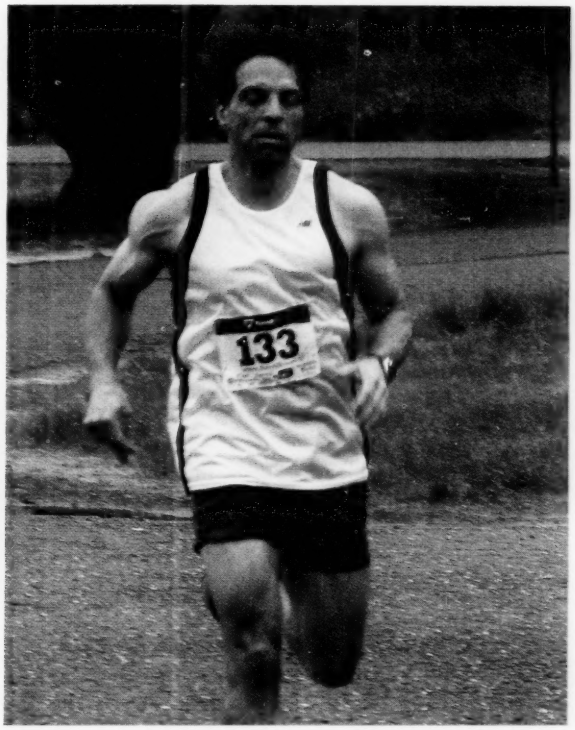
To complete the job, the Kemet team conducted a series of tests to make sure that the new business continuity system would work flawlessly. "Once we had confirmed that, we basically declared it in production and then, a month later, we let our traditional [disaster] recovery contract expire," Burch says.

Planning carefully and paying close attention to detail are vital to a successful deployment, Burch says. "Most of all, look carefully at any contracts that might be involved with the new data center, particularly any disaster recovery or hosting contracts," he advises.

LexisNexis' Williams says that finding a competent and trustworthy colocation partner is essential to the success of a secondary data center, since the provider will be responsible for delivering essential infrastructure services, including power and cooling. "The key thing," he says, "is to find a partner that can provide what I would consider to be that intimate level of service — meaning that you feel that you're the only client there." ◆

Edwards *is a technology writer in the Phoenix area. You can contact him at jedwards@gojohnedwards.com. Additional reporting by* Computerworld's **Johanna Ambrosio.**





» **Before: Faced with the prospect of taking medication for his weight-related ailments, Frederick Curiel, a computer specialist at Kaiser Permanente, chose diet and exercise instead. Now: Curiel sports a 50-pounds-lighter physique.**

IT Staffers Shed 1,500 Pounds

Kaiser Permanente's 'CIO Challenge' pumps up IT morale while promoting healthier lifestyles. By Stacy Collett

WITH HIS 50th birthday looming at the end of July in 2010, Frederick Curiel knew he had to lose weight. But as with many IT professionals, the demands of his job had put diet and exercise on the back burner.

"My lab [results] were 'frightening,' according to my doctor," recalls Curiel, a computer specialist in the Pleasanton, Calif., office of health maintenance organization Kaiser Permanente. "She wanted me to go on medications." Curiel preferred to try diet and exercise, but he says, "I tried a bunch of things and had lost some weight, but I reached a plateau."

Fortunately for Curiel, he was about to get a little help from his IT co-workers.

At about the same time that Curiel needed a nudge, Philip Fasano, executive vice president and CIO of Kaiser Permanente, was looking for a little motivation of his own. Coming off an ankle injury, Fasano needed incentive to get back in shape.

Kaiser Permanente had already begun a companywide eight-week physical activity program and cross-country virtual journey called "Thrive Across America," which ran from May to June 2010. Employees and teams were encouraged to track their physical activity via a Web portal. Minutes of exercise were converted into miles on a cross-country journey.

But Fasano decided to take the program a step further by going

public on the company's IdeaBook internal social network with his current weight and his goal of losing at least five pounds. He launched the "5x500 CIO Challenge" and invited the rest of the IT staff to join him in his quest.

Fasano posted weekly blogs to update his progress and receive feedback. Soon, other participants began blogging questions, celebrating their own weight-loss milestones and posting notes of encouragement. The CIO Challenge became one of the most active groups on IdeaBook. By the end of the seven-week program, 400 IT employees collectively lost some 1,500 pounds. Curiel broke through his weight-loss slump, eventually dropping a total of 50 pounds.

What's more, Fasano quickly learned that the challenge's benefits to the IT department outweighed the pounds lost.

"It clearly became an opportunity for us to engage in something in common regardless of place in the IT organization," Fasano says. "It also created a community of interest where we had a kinship and a partnership."

Moreover, people started asking Fasano how his ankle was recovering. "It allowed me to communicate directly with our IT employees in a way that I hadn't before — in such a direct manner," he says.

Following the success of the first program, Kaiser Permanente last fall launched a 10-week program with a focus on walking. And Fasano once again put out a call to his team to join him in a special IT challenge. This time, the goal was for each participant to walk 10 miles per week, and 341 IT staffers signed on for the challenge. At the close of the program, the team had collectively covered some 27,000 miles; that's a greater distance than the circumference of the Earth.

Healthy Dividends

For Betty Pizarro, lead administrative assistant at Kaiser Permanente's innovation and technology department in Oakland, Calif., the original weight-loss challenge sparked new office friendships and a healthier lifestyle.

She was impressed that Fasano publicly disclosed his height and weight, and the amount of weight he needed to lose. "I thought, if this man can do this, I can do this. So I took on the challenge," Pizarro recalls.

She found a walking buddy in the IT department, and they began walking outside during their lunch break. "It's hard to lose weight and be healthy by yourself, so I attached myself to positive people," she says. Pizarro credits her buddy for "pulling me out of my cube" on days when she didn't want to leave her desk. Every other week, Pizarro walked with her work mentor in the IT department.

Pizarro lost over 25 pounds. "I was on two blood pressure medications. I'm now on one, and I am as cute as hell!" she says with a laugh.

Though Pizarro was initially reluctant to share her thoughts, occasionally she mustered the courage to put a note on her blog when she lost five pounds or went down a dress size. "I did it when I felt the need to acknowledge to myself that I hit this mark," she says.

Curiel used the company's online total health assessment tool to set goals and timelines to help him stay on track, in addition to working out every day at the gym. "I modified my diet and started consuming more fruits and vegetables. At my desk, I have fruit, vegetables and nuts. I stopped going out to lunch and started eating what I brought in," Curiel says.

He's been able to keep the weight off, thanks in part to the departmentwide lifestyle change. "Now I have co-workers who talk about health and fitness just as office chat," he explains.

Tony Pannone, a senior analyst in production services, lost 40 pounds with help from the CIO Challenge. He and his colleagues on the evening shift still support one another's healthy habits. "Six of us on second shift walk every workday at 8:30 p.m. We walk up six flights of stairs to the top of the parking garage and watch the sun set off the mountains," Pannone says. "Also, we all bring healthy snacks — pita chips, hummus and veggies. The whole shift participates."

Not everyone in the IT department needed to lose weight — and some who may have needed to shed a few pounds declined to participate. "When you lose weight, you start losing some of your fat friends. So I reached out to people who think healthy. People who were continuing in their old habits would try to offer me an extra piece of cookie," Pizarro says.

But many IT workers took the opportunity to change their sedentary habits. Lydia Keough, an IT business segment partner in Kaiser Permanente's Denver office, felt that she could be in better shape. "I hadn't been working out like I normally do — I had gotten away from it, and I missed it," she says, adding that she didn't think she had enough time to fit exercise back into her routine.

"When the challenge came up, I saw other people doing it and I [realized], gosh, everyone else is out of time, too!" she recalls. "It just alerted me that maybe I wasn't really using all the time I had in the best way to be in shape." She re-evaluated her daily schedule and decided that she could get up an hour earlier to get on the treadmill, take that walk in the evening, or watch the nightly news while walking on the treadmill after dinner "instead of sitting for another 40 minutes." She posted her tips on the internal blog, as well. Today, Keough is in better shape and eight pounds lighter.

> **"[The fitness challenge] clearly became an opportunity for us to engage in something in common regardless of place in the IT organization."**
>
> **PHILIP FASANO,** EXECUTIVE VICE PRESIDENT AND CIO, KAISER PERMANENTE

At work, "we have a treadmill on the floor above us. When you're sitting for an hour or more, you can get on the treadmill for five minutes and then come back and work," she says. "With exercise, you feel more focused."

The challenge reminded Keough of how good she feels when she exercises regularly and of how much energy that brings her. "I realized that you have control to fit this into your life. That was my ah-ha moment." ◆

Collett *is a* Computerworld *contributing writer. You can contact her at stcollett@aol.com.*

Security Manager's Journal

MATHIAS THURMAN

BYOD Planning Gets a Boost

A key technology to allow for the secure use of personal devices on the network is virtual desktop infrastructure.

WE'RE MAKING big strides toward our CIO's goal of enabling a "bring your own device" (BYOD) policy. For me, it's none too soon.

That's because employees are increasingly finding ways to connect their own Macs, tablet PCs and other mobile devices to our internal corporate environment, both from within the office and remotely. In the absence of a policy, it's been a case of anything goes as long as you don't get caught. By embracing this trend and setting up guidelines, we stand a chance of controlling what's connected to our network and securing our environment.

One important technology that will make this work is virtual desktop infrastructure, commonly referred to as VDI — if it's deployed in a secure manner, that is. This week, I met with the VDI project team to make sure that's how it happens.

One of the benefits of allowing only known devices to connect to your network is that you can track a PC to a user and location because you know all the IP addresses, machine names and MAC addresses that are permitted. With VDI, we can expand the pool of devices that can connect to the network because the VDI will identify the user. If, for example, some piece of malware enters the network, we can use our audit and event logs and our security incident and event management tool to track down the source.

We plan to allow VDI access from untrusted environments — for example, a PC at an Internet kiosk halfway around the world. One of my requirements is that we enable a sandbox mode to ensure that there is no possibility of direct interaction between the untrusted PC and the VDI environment. This way, malware can't be uploaded to the trusted VDI environment, and intellectual property can't be downloaded to the PC. (Some of these restrictions can be waived if the VDI determines that the remote PC is, in fact, a company asset.) I also want aggressive settings for session timeout and screen lock, to mitigate the problems that arise when forgetful workers walk away from a kiosk without logging out of the VDI.

Follow the discussions about security: computerworld.com/blogs/security

"VDI could also help manage the network access of vendors, partners, contractors and others.

Trouble Ticket

» **At issue:** The CIO's goal of allowing more use of personal devices is moving ahead.

» **Action plan:** Securely implement VDI, so that users can still be identified, even if their devices are unknown.

VDI could also be helpful in managing the access of our contingent workforce. This includes vendors, partners, suppliers, distributors, contractors and consultants. Some of these people need access to our infrastructure and applications, but providing them with a VPN client can be a logistical nightmare, since varying levels of access are needed for each engagement. VDI will allow us to set up a "rule of least privilege" (one of my primary security philosophies) for all of our contingent workers. Once again, this will help protect our infrastructure and limit the compromise of our intellectual property.

Security Ground Rules

I also told the project team that we need a login banner notifying users that they have no expectation of privacy. Our legal department has demanded that we force users to click a box indicating that they accept the possibility that the company might monitor their activity.

Another of my requirements is that there be no residual data pertaining to VDI activity on the host PC after a user has logged out. This will be especially important when the PC is untrusted (like one used in an Internet cafe, for example). In addition, the VDI environment must be integrated into Active Directory, so we can easily make the VDI unavailable to former employees and current employees who no longer need access.

Finally, as with all remote connections, any access to the VDI environment must be encrypted and require two-factor authentication. ◆

This week's journal is written by a real security manager, ***"Mathias Thurman,"*** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

Career Watch

ASK A PREMIER 100 IT LEADER

Dennis Hodges

The CIO at **Inteva Products** *answers questions about his hiring criteria, the skills needed in a cloud-based world and more.*

What qualities do you look for when hiring for your team? The ability to work with others is a key requirement in today's team-oriented environment. Another is the ability to look at IT as a service and understand how we support the business, even if a person is an infrastructure specialist. Everything and everyone supports the business, not just functional analysts.

If you have a question for one of our Premier 100 IT Leaders, send it to **askaleader@computerworld.com**, and watch for this column each month.

I've been in law enforcement for over 10 years, and my opportunities to advance have been slim. My position is secure, with good benefits. Unfortunately, it doesn't provide me with any challenges. A company that is hiring in my area will accept applicants with only a bachelor's degree and will train you on the job. I have a good background in IT, especially hardware. Should I give up a sure thing to pursue an IT or project manager position in this economy? The IT market has certainly picked up in the past year. IT can be a very challenging and rewarding area, and I feel that opportunity abounds. On-the-job training is a great way to get the basics and get in on the ground floor. There is a groundswell of projects that were delayed over the past couple of years with the recession that are now starting to come back to life. While there are no guarantees, I would say that this would be a good career move.

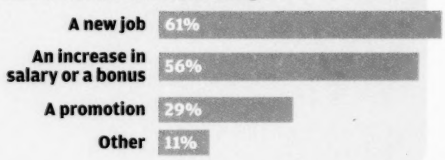
In an increasingly cloud-based world, what skills will be most in demand in years to come? We have to look at the two cloud environments. Public clouds alleviate the need for server support, but you still need strong security and firewall expertise. With a private cloud, you will actually require stronger support skills in the advanced technical systems that make up that environment. This includes experience in virtual-machine support from the server side, storage expertise, networking skills, and security and firewall expertise. You also have to be a good architect.

H-1B FEES TO BOOST U.S. TRAINING

Using money generated by the H-1B visa program, the U.S. government will start providing grants for training unemployed U.S. job seekers. The $160 million program is being implemented by the Labor Department, which will provide grants to 36 private-public partnerships serving 20 states and the District of Columbia.

Network Pros See Value in Certs

Half of IT workers said in a recent survey that a certification led to higher pay. Of the 700 people who responded to the survey, which was conducted by *Network World* and IT management software vendor SolarWinds, three quarters had at least one certification. Respondents, who predominantly work in networking, said certification led to one or more of the following:



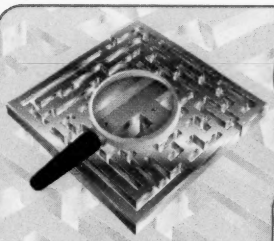
The Hottest Scripting Languages

If you want to pump up your résumé with mastery of a hot scripting language, take a peek at the roundup that *InfoWorld*'s Peter Wayner compiled. Besides sorting eight languages into "Hot" and "Not Hot" categories, he offers evidence to support his rankings and shares interesting tidbits, such as the fact that Python started to ascend as a direct result of the housing market crash. To find out more about this and other trends in scripting languages, go to *InfoWorld.com*. Meanwhile, here's a recap of Wayner's assessments:

HOT SCRIPTING LANGUAGES
JavaScript
Python
Scala
R
PHP

LUKEWARM SCRIPTING LANGUAGE
Ruby

NOT-HOT SCRIPTING LANGUAGES
ActionScript
Perl



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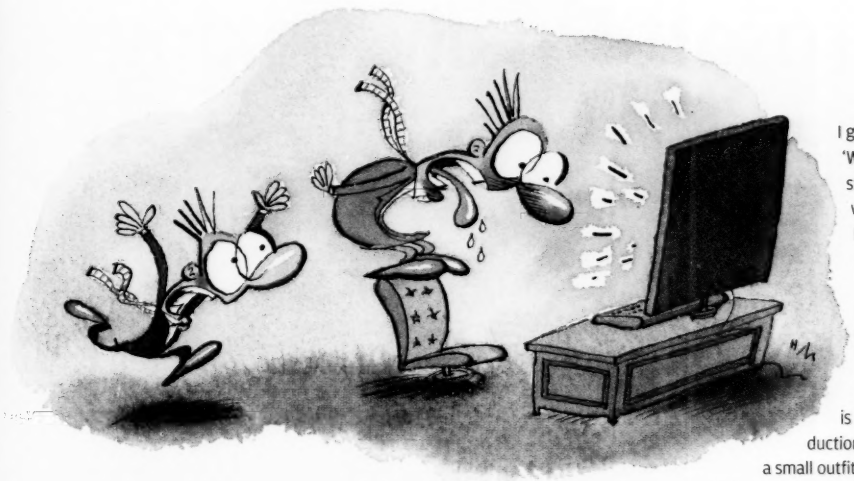

HAL MAYFORTH

Were the Extensions .xxx?

Among his other duties, this sysadmin pilot fish is responsible for managing backup of his division's Unix workstations. "I didn't make a point of watching the backups, but one particular day, I noted a large number of files with recognizable names and extensions," fish says. "The total size of these files was just over half a gigabyte, quite a bit for that time. Being curious, I determined whose directory was being backed up. I was friends with the C-level boss and went up to his office.

After a bit of usual small talk, I asked if programmer X was in medical school. 'What?' said the boss with a confused look. I responded, 'I thought he might be studying gynecology, based on some files I noticed as the backup process was running.' The boss jumped up from his desk, said, 'Wait right here!' and ran from his office. A few minutes later, he returned and said, 'Thank you very much. He's one of my best programmers and I couldn't afford to lose him.' Sure enough, there was about half a gig more space on the file system than before my visit."

You're Welcome

Support pilot fish receives an email from one of her more, um, challenging users. The subject line: *No connect.* "The body of the email read: 'Is the server down? No connection, and that is the error message,' " says fish. "That's all the email contained. Was it his cell phone? Laptop? Who knows? What program was it? Who knows? So I sent him a reply: *On what – your phone, your computer? What program is giving you this message? I need more information. Thanks!* Not even 10 minutes later, I got his reply: 'Working now.' I still don't know what was wrong. Probably never will, either."

What's It Worth To You?

This pilot fish is hired as a production assistant at a small outfit that designs semiconductors. "Then they found out that I 'knew about computers,' and since we didn't have an IT department, I became the default IT guy for the non-engineers," says fish. As for the engineers, they "used Sun workstations, which I knew little about. One day, the shipping guy was on vacation, and since that was under the auspices of Production, I became the shipping guy for the week. An engineer came running to me saying he was having a trouble with his workstation. 'Sorry,' I told him. 'I don't really know anything about those workstations.' Can't you at least look at it? he pleaded. 'Well, I could,' I answered, 'if you don't mind me loudly telling everyone within earshot about how the shipping guy knows more about computers than the engineers.' He left to solve the problem by himself."

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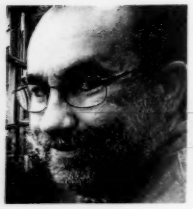

OPINION

S.J. VAUGHAN-NICHOLS

Microsoft Finally Making Good Products — Too Late

Now that Microsoft is finally making good server and desktop OSs, we're moving on.

IF YOU'VE read many of my articles over the past 20 years, you may have noticed that I don't care for Microsoft or its products. That isn't because I think open-source software or Apple products are unbeatably great. It's because Microsoft's products are usually awful.

A lot of you are thinking I can't possibly be right about that. After all, you work and play with Windows, Office and other Microsoft offerings every day. You're hardly in the minority. But has Microsoft enjoyed its enviable market position because it produced the best products? Nah.

Microsoft became No. 1 because, in business, Bill Gates had the morals of a great white shark in a feeding frenzy. By the time the courts finally slapped Microsoft down in the Netscape case, it was too late. The great monopolist had either killed off or bought out its competition.

To quote Thomas Penfield Jackson, the presiding judge in *U.S. v. Microsoft*, "Most harmful of all is the message that Microsoft's actions have conveyed to every enterprise with the potential to innovate in the computer industry. Through its conduct toward Netscape, IBM, Compaq, Intel, and others, Microsoft has demonstrated that it will use its prodigious market power and immense profits to harm any firm that insists on pursuing initiatives that could intensify competition against one of Microsoft's core products. Microsoft's past success in hurting such companies and stifling innovation deters investment in technologies and businesses that exhibit the potential to threaten Microsoft. The ultimate result is that some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest."

That's why most of you are using Microsoft products today. But just as Microsoft stomped out its commercial competition, open-source systems, such as Linux and Firefox, began appearing, and Microsoft's usual tactics couldn't touch them. At about the same time, Steve Jobs returned to Apple and refocused what was then a wreck of a company on creating "insanely great" products. Against Jobs' high-end, high-price approach, Microsoft was again unable to compete.

At first, Microsoft didn't really care. Even though it lost its antitrust case, it got away with little more than a hand slap. Life was good.

Until, that is, Microsoft started noticing that open source and Apple were slowly eating away at its markets. Microsoft, now an old, fat dinosaur, finally had to start making good, competitive products. It took ages, but today, Windows Server 2008 R2 is a great server operating system, Windows 7 is an excellent desktop operating system and even Internet Explorer 9 is a reasonable Web browser.

Too bad it's too late. Now that Microsoft is finally making good server and desktop operating systems and programs, we're moving to the cloud, smartphones and tablets. Yes, Microsoft has Azure for the cloud, but it's only one of many cloud platforms, and there's nothing compelling about it. As for the mobile device market, Windows 8 will never make it out in time to compete with the open-source-based Android and Apple's iOS. It's a dead OS walking.

Don't get me wrong. Microsoft won't drop dead tomorrow. But like the fat-client desktop, it's in decline. I won't miss it when it's finally gone. ◆

Steven J. Vaughan-Nichols has been writing about technology and the business of technology since CP/M-80 was cutting-edge and 300bps was a fast Internet connection — and we liked it! He can be reached at sjvn@vna1.com.

Preston Gralla sees Microsoft's recent app blitz as a sign that the company is learning to compete. **Page 14**

Discussion Underway

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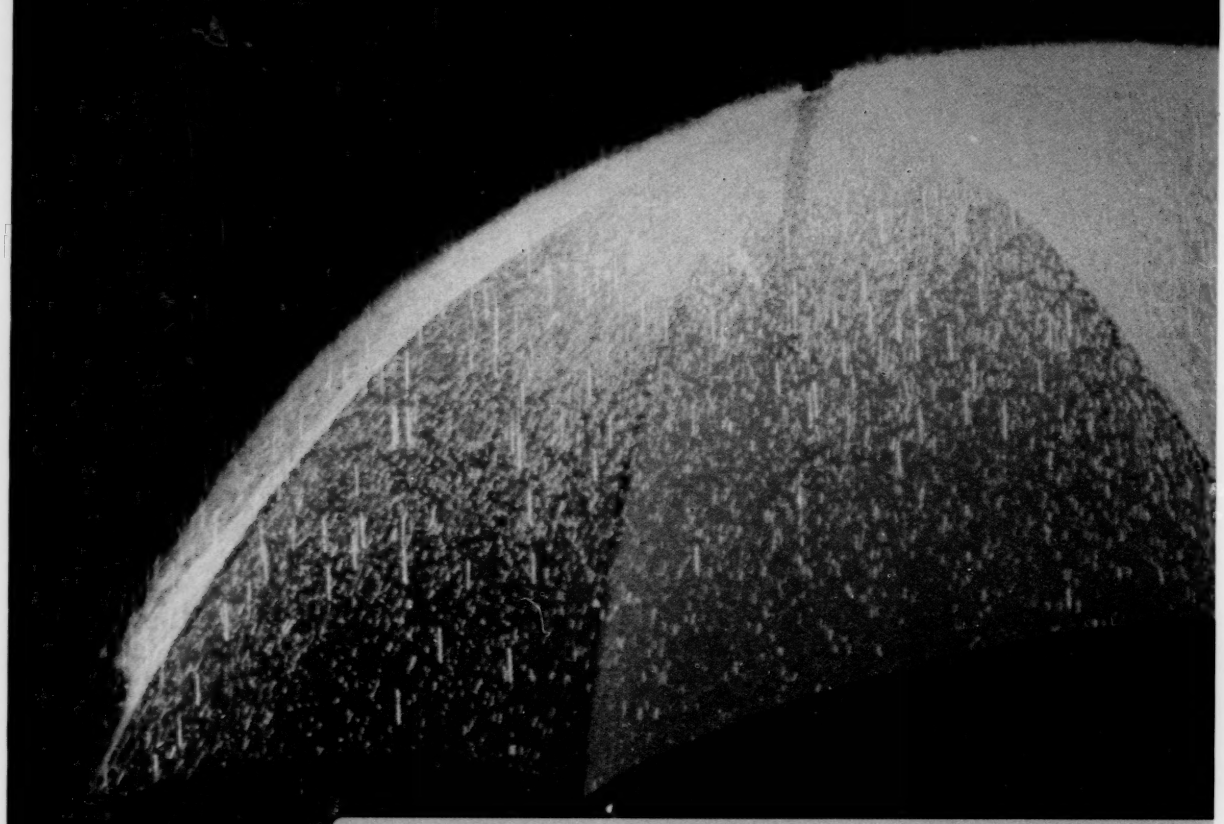

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